



THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Patent Application of

GUNARATNAM et al.

Atty. Ref.: 4398-211

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Filed: March 6, 2002

Examiner: Annette Fredricka Dixon

For: MASK AND HEADGEAR CONNECTOR

\* \* \* \* \*

February 23, 2009

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Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**APPEAL BRIEF**

Sir:

Appellant hereby **reinstates the appeal** to the Board of Patent Appeals and Interferences from the last decision of the Examiner.

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(I) **REAL PARTY IN INTEREST**

The real party in interest is ResMed Limited, a corporation of the country of Australia, by way of an Assignment recorded at Reel/Frame 012269/0646.

**(II) RELATED APPEALS AND INTERFERENCES**

The appellant, the undersigned, and the assignee are not aware of any related appeals, interferences, or judicial proceedings (past or present), which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

**(III) STATUS OF CLAIMS**

The application was filed including claims 21-40 (claims 1-20 were cancelled without prejudice or disclaimer by Preliminary Amendment). Throughout the prosecution of the application claims 21-32, 36-38 and 40 were cancelled without prejudice or disclaimer, and claims 41-106 were added, with claims 41-61, and 64-70 having been subsequently cancelled without prejudice or disclaimer. Claims 1-32, 36-38, 40-61 and 64-70 have also been cancelled. Claims 33-35, 39, 62, 63 and 71-106 are thus pending.

Appellants filed a Notice of Appeal with a Pre-Appeal Brief Request for review on July 16, 2008. A Notice of Panel Decision dated August 13, 2008 instructed Appellants to proceed to the Board. Appellants filed an Appeal Brief on September 10, 2008. Despite the panel's decision that there was at least one actual issue for appeal, the examiner re-opened prosecution by issuing a non-final Office Action dated November 24, 2008. The examiner withdrew all of the previous rejections and issued two new grounds of rejection based on three newly cited prior art references. However, the examiner indicated that independent claims 62 and 63 are allowed and dependent claims 97 and 98 would be allowable in rewritten in independent form.

Claims 33-35, 39, 71- 96 and 99-106 are thus on appeal.

**(IV) STATUS OF AMENDMENTS**

No amendments have been filed since the date of the April 25, 2008 Final Rejection or the November 24, 2008 Office Action.

**(V) SUMMARY OF CLAIMED SUBJECT MATTER**

The following summary is for illustrative and explanatory purposes only. The references to the specification and drawings are not an admission that the claimed inventions are limited to any, or all, of the disclosed embodiments.

33. A respiratory mask assembly comprising:

a headgear structure (100) including at least one strap portion (110) having an end (Fig. 1);  
a male connector portion (600; 700) attached to the end of the at least one strap portion (Figs. 6a-6d; Figs. 7a and 7b; page 6, lines 30-31), the male connector portion (600; 700) including a trailing portion (630) that has a pair of spaced side portions (690) and a cross bar (680, 710a, 710b) extending transversely therebetween (Fig. 6a, page 6, line 30), the male connector portion (600; 700) also including a leading portion (620) that has a pair of longitudinally extending side beams (640) spaced slightly inwardly from the side portions (690) (Fig. 6a), the leading portion (620) including a cross piece (650) extending between the side beams (640) and defining a leading edge of the male connector portion (600) (page 6, lines 16-17), the leading portion of the male connector portion also including a cantilevered member (660) extending from an intermediate portion of the cross piece (650) toward the trailing portion (630) of the male connector portion (600) (page 6, lines 17-18), the cantilevered member (660) being movable between deflected and undeflected positions and being resiliently biased toward the undeflected position, the cantilevered member (660) including a locking element (610)

extending outwardly therefrom, the locking element (610) being positioned on the cantilevered member (660) generally spaced from the cross piece (650), the leading portion (620) of the male connector portion (600; 700) including a ridge structure (670) adjacent the trailing portion (630) and extending generally perpendicularly relative to the side beams (640) (page 6, lines 14-28);

a mask frame (400) (Fig. 5, page 5, line 8); and

a female connector portion (470) secured to the mask frame (400) and being configured to receive the male connector portion (600; 700) therein (page 5, lines 25-27).

34. The respiratory mask assembly of claim 33, wherein the mask frame (400) includes a front wall portion (430) defining a forward end of the mask frame (400), the front wall portion (430) having a circular gas inlet aperture (460) configured to connect to a gas delivery conduit, the mask frame (400) including a pair of inclined side wall portions (420) and a base portion (410), each side wall portion (420) and the base portion (410) having a portion thereof connected to the front wall portion (430) (Fig. 5, page 5, lines 8-23).

35. The respiratory mask assembly of claim 34, wherein the mask frame (400) includes a rim (440) at rear edges of the inclined side wall portions (420) and the base portion (410), the rim (440) defining a rearward end of the mask frame (400) and being configured to allow a cushion to be attached thereto (Figs. 4 and 5, page 5, lines 14-16).

39. A respiratory mask and headgear combination comprising a respiratory mask having a rigid mask frame (400) (Figs. 4 and 5), and a headgear (100) (Fig. 1) for securing said mask on a patient, said headgear including at least one attachment strap (110), said mask frame (400) having secured thereto a rigid first connector portion (470) (page 5, lines 25-26), further comprising a second connector portion (600; 700) (page 6, lines 12; page 7, lines 9-11) adapted for releasable mating with said first connector portion (470), said second connector (600; 700) being connected to said attachment strap (110) (page 6, lines 30-31), wherein

said first and second connector portions (470; 600, 700) form a press-release connection between said mask frame and said strap (page 6, lines 25-28);

said first connector portion (470) is a female connector secured to said mask frame (page 5, lines 25-26); and

said second connector portion (600; 700) is a corresponding male connector (page 6, line 12; page 7, lines 9-11), and

said male connector (600; 700) includes a resiliently biased cantilever member (660) depending from a leading end portion (620) of said male connector (600; 700) and being lockable with said female connector (470) (page 6, lines 21-28).

71. A respiratory mask assembly according to claim 33, wherein each side portion (690) of the trailing portion (630) comprises at least one groove (Fig. 6a, page 6, lines 31-32).

72. A respiratory mask assembly according to claim 33, wherein the locking element comprises two lugs (610) on opposite sides of the cantilevered member (660) (Figs. 6a-7b, page 6, line 19).

73. A respiratory mask assembly according to claim 72, wherein each lug (610) has a wedge profile (page 6, lines 21).

74. A respiratory mask assembly according to claim 33, wherein the ridge structure (670) is formed on the cantilevered member (660) (page 6, line 19).

75. A respiratory mask assembly according to claim 33, further comprising an arcuate ridge (675) (Figs. 6a and 6b) between the ridge structure (670) and the locking element (610) (page 7, line 5) (see November 20, 2007 Amendment to drawings and specification).

76. A respiratory mask assembly according to claim 33, wherein the pair of spaced side portions (690) and the cross bar (680) define an aperture configured to receive the end of the at least one strap portion (page 6, line 30 through page 7, line 4).

77. A respiratory mask assembly according to claim 33, wherein the mask frame (400) comprises an extension (450) configured for attachment of a forehead support (Figs. 4

and 5, page 5, lines 17-18).

78. A respiratory mask assembly according to claim 34, wherein the female connector portion (470) is secured to the front wall portion (430) of the mask frame (400) (page 5, lines 25-26).

79. A respiratory mask assembly according to claim 33, wherein the female connector portion (470) is secured to the mask frame (400) to permit the male connector portion (600; 700) to be connected to and disconnected from the female connector portion (470) in a single-hand operation (page 8, lines 7-9).

80. A respiratory mask assembly according to claim 39, wherein the mask frame (400) includes a front wall portion (430) defining a forward end of the mask frame (400), the front wall portion (430) having a circular gas inlet aperture (460) configured to connect to a gas delivery conduit (Figs. 4 and 5) (page 5, lines 20-23), the mask frame (400) including a pair of inclined side wall portions (420) and a base portion (410), each side wall portion (420) and the base portion (410) having a portion thereof connected to the front wall portion (430) (page 5, lines 12-14).

81. A respiratory mask assembly according to claim 80, wherein the mask frame (400) includes a rim (440) at rear edges of the inclined side wall portions (420) and the base portion (410), the rim (440) defining a rearward end of the mask frame (400) and being

configured to allow a cushion to be attached thereto (Figs. 4 and 5) (page 5, lines 14-17).

82. A respiratory mask assembly according to claim 39, wherein the cantilever member (660) comprises a lug (610) configured to engage a socket (490) in the female connector (470) (Figs. 6a-7b, page 6, lines 8-10).

83. A respiratory mask assembly according to claim 82, wherein the lug (610) has a wedge profile (page 6, line 21).

84. A respiratory mask assembly according to claim 39, wherein the mask frame (410) comprises an extension (450) configured for attachment of a forehead support (Figs. 4 and 5, page 5, lines 17-18).

85. A respiratory mask assembly according to claim 80, wherein the female connector (470) is secured to the front wall portion (430) of the mask frame (400) (Figs. 4 and 5, page 5, lines 25-26).

86. A respiratory mask assembly according to claim 39, wherein the female connector (470) is secured to the mask frame (400) to permit the male connector (600; 700) to be connected to and disconnected from the female connector portion in a single-hand operation (page 8, lines 7-9).

87. A headgear (100) for a respiratory mask assembly, the headgear comprising:

- at least one strap portion (110) having an end;
- a male connector portion (600; 700) (Figs. 6a-7b) attached to the end of the at least one strap portion (110), the male connector portion (600; 700) including a trailing portion (630) that has a pair of spaced side portions (690) and a cross bar (680) extending transversely therebetween (Figs. 6a-7b) (page 6, lines 30-32), the male connector portion (600; 700) also including a leading portion (620) that has a pair of longitudinally extending side beams (640) spaced slightly inwardly from the side portions (690), the leading portion (620) including a cross piece (650) extending between the side beams (640) and defining a leading edge of the male connector portion (page 6, lines 16-17), the leading portion (620) of the male connector portion (600; 700) also including a cantilevered member (660) extending from an intermediate portion of the cross piece (650) toward the trailing portion (630) of the male connector portion (600; 700), the cantilevered member (660) being movable between deflected and undeflected positions and being resiliently biased toward the undeflected position (page 6, lines 22-28), the cantilevered member (660) including a locking element (610) extending outwardly therefrom (page 6, lines 19), the locking element (610) being positioned on the cantilevered member (660) generally spaced from the cross piece (650), the leading portion (620) of the male connector portion (600; 700) including a ridge structure (670) adjacent the trailing portion (630) and extending generally perpendicularly relative to the side beams (640) (page 6, line 19).

88. A headgear according to claim 87, wherein each side portion (690) of the trailing portion (630) comprises at least one groove (page 6, lines 31-32).

89. A headgear according to claim 87, wherein the locking element (610) comprises two lugs on opposite sides of the cantilevered member (660) (Figs. 6a-7b, page 6, line 19).

90. A headgear according to claim 89, wherein each lug (610) has a rounded wedge profile (page 6, line 21).

91. A headgear according to claim 87, wherein the ridge structure (670) is formed on the cantilevered member (660) (page 6, line 19).

92. A headgear according to claim 87, further comprising an arcuate ridge (675) between the ridge structure (670) and the locking element (610) (page 7, line 5, see the November 20, 2007 amendments to the specification and drawings).

93. A headgear according to claim 92, wherein a height of the arcuate ridge (675) is less than a height of the ridge portion (670) and more than a height of the locking element (610) (Figs. 6b-6d).

94. A headgear according to claim 87, wherein the pair of spaced side portions (690) and the cross bar (680) define an aperture configured to receive the end of the at least one strap portion (page 7, lines 1-3), the aperture having a first width adjacent the cross bar (680) and a second width adjacent the cantilevered member (660), the first width being greater than the second width (Fig. 6a).

95. A headgear according to claim 87, wherein a distance between a leading side of the cross bar (680) and a trailing edge of the cantilever member (660) is at least 5 mm (page 7, lines 1-3).

96. A headgear according to claim 87, wherein the ridge structure (670) has a width of approximately 14 mm and a length of approximately 5 mm (page 7, lines 16-17).

99. A respiratory mask and headgear combination comprising a respiratory mask having a rigid mask frame (400) (Figs. 4 and 5), adjustable headgear (100) (Fig. 1) for securing said mask on a patient, said headgear (100) including at least one attachment strap (110) adapted to extend in a predetermined direction when coupled with the frame (400) (page 7, lines 20-22), said mask frame having secured thereto a substantially rigid first connector (470) (page 5, lines 25-26), further comprising a second connector (600; 700) adapted for releasable mating with said first connector (470), said second connector being connected to said attachment strap of the headgear (page 7, lines 1-3), wherein

said first and second connectors (470; 600; 700) form a press-release connection (page 8, lines 7-9 and 14-15);

said first connector (470) is a female connector having a receiving slot (page 6, line 1), said female connector (470) being secured to and extending laterally away from said mask frame (400) such that the slot remains generally aligned with the predetermined direction of the strap (page 7, lines 20-22 and page 5, lines 27-31);

said second connector (600; 700) is a corresponding male connector (page 6, line 12); and

said male connector includes a resiliently biased cantilever member (660) depending from a leading end portion (620) of said male connector (600; 700) and being lockable with said female connector (470) upon insertion of said leading end portion (620) into the receiving slot of the female connector (470) (page 6, lines 14-15 and 25-28).

100. A respiratory mask assembly according to claim 99, wherein the female connector (470) is secured to the mask frame (400) to permit the male connector portion (600; 700) to be connected to and disconnected from the female connector portion (470) in a single-hand operation (page 8, line 7).

101. A respiratory mask assembly according to claim 99, wherein the mask frame (400) includes a front wall portion (430) defining a forward end of the mask frame (400), the front wall portion (430) having a circular gas inlet aperture (460) configured to connect to

a gas delivery conduit (page 5, lines 20-22), the mask frame including a pair of inclined side wall portions (420) and a base portion (410), each side wall portion (420) and the base portion (410) having a portion thereof connected to the front wall portion (430) (Figs. 4 and 5, page 5, lines 12-16).

102. A respiratory mask assembly according to claim 101, wherein the female connector (470) is secured to the front wall portion (430) of the mask frame (400) (Figs. 4 and 5, page 5, lines 25-26).

103. A respiratory mask assembly according to claim 101, wherein the mask frame (400) includes a rim (440) at rear edges of the inclined side wall portions (420) and the base portion (410), the rim (440) defining a rearward end of the mask frame (400) and being configured to allow a cushion to be attached thereto (page 5, lines 14-17).

104. A respiratory mask assembly according to claim 99, wherein the mask frame (400) comprises an extension (450) configured for attachment of a forehead support (page 5, lines 17-18).

105. A respiratory mask assembly according to claim 99, wherein the cantilever member (660) comprises a lug (610) configured to engage a socket (490) in the female connector (470) (page 6, lines 25-28).

106. A respiratory mask assembly according to claim 105, wherein the lug (610) has a wedge profile (page 6, line 21).

**(VI) GROUND S OF REJECTION TO BE REVIEWED ON APPEAL**

Claims 39, 80-86 and 99-106 were rejected under 35 U.S.C. §103(a) over Urso (U.S. Patent 5,069,205) in view of Haines et al. (U.S. Patent 5,996,192).

Claims 33-35 and 87-96 were rejected under 35 U.S.C. §103(a) over Urso in view of Kasai (U.S. Patent 4,802,262).

**(VII) ARGUMENT**

**A. Claims 39, 80-86 and 99-106 Are Not Obvious Over Urso in View of Haines et al.**

**1. Claim 39 Is Not Obvious**

Claim 39 recites a respiratory mask and headgear combination comprising a respiratory mask having a rigid mask frame, and a headgear for securing the mask on a patient. The headgear includes at least one attachment strap and the mask frame has secured thereto a rigid first connector portion and a second connector portion adapted for releasable mating with the first connected portion. The second connector portion is connected to the attachment strap. The first and second connector portions form a press-release connection between the mask frame and the strap. The first connector portion is a female connector secured to the mask frame and the second connector portion is a corresponding male connector. The male connector includes a resiliently biased cantilever member depending from a leading end portion of the male connector and being lockable with the female connector.

The combination of Urso and Haines et al. fails to establish a *prima facie* case of obviousness because the references, if combined, would not include all of the features of claim 39. The references also do not contain any interrelated teachings that would provide one of ordinary skill in the art with a reason for combining the references.

The combination of Urso and Haines et al. would fail to include, at least, a rigid first connector portion and a second connector portion adapted for releasable mating with the first connector portion, as recited in claim 39. The combination would also fail to

include a resiliently biased cantilever member depending from a leading end portion of a male connector.

The Office Action on page 2, paragraph number 3, states that Urso discloses a “mask frame (12) having secured thereto a rigid first connector portion (22) further comprising a second connector portion (42) adapted for reliable mating with the said first connector portion, said second connector being connected to said attachment strap (39).” (Underlining emphasis added.)

While Urso may in fact disclose that the lower mounting stud 22 is reliably mated with the C-washer 42, Urso does not disclose or suggest that the lower mounting stud 22 is adapted for releasable mating with the C-washer 42. In fact, Urso discloses that the right and left lower adjustable buckle assemblies 40 are secured to the lower stud 22 by means of the C-washer 42. Each buckle assembly 40 includes a strap portion 44 having a forward end portion which is suitably apertured for receipt of the stud 22. See column 3, lines 42-49.

It is respectfully noted that the constant length securing means 26 of Urso are also held onto a stud 20 by a C-washer 34 which is received by the stud 20. See, for example, column 3, lines 28-41, of Urso. Thus, Urso does not disclose or suggest any first and second connector portions which are adapted for releasable mating with each other, as recited in claim 39.

The Office Action on page 2, paragraph number 3, also states that “said first (22) and second connector portions (42) form a press-release connection between the mask frame (12, column 2, lines 50-52) and said strap (39).”

Contrary to the assertion in the Office Action, Urso does not disclose or suggest that the lower stud 22 and the C-washer 42 form a press-release connection. Urso merely discloses in column 2, lines 47-54, that the quick-donning head harness assembly 10 has a face mask assembly 12 that includes a rigid face piece 14 and a flexible face seal 16. The face mask includes a rigid lens 14 and a peripheral flexible face seal 16 being supported thereon. There is no disclosure or suggestion, however, by Urso that the lower stud 22 forms a press-release connection with the C-washer 42 as alleged by the examiner.

In addition to the deficiencies of Urso noted above, the Office Action on page 3, lines 4-7, acknowledges that Urso does not expressly disclose the first connector (i.e. the lower stud 22) to be female and secured to the mask frame, and the second connector (i.e. the C-washer 42) to be male having a cantilever member depending from a leading end portion and the male connector being lockable with the female connector.

The Office Action concludes that at the time the invention was made the arrangement of the male and female connectors was known as well as the cantilever member on the male connector. The Office Action cites on page 3, lines 13-16, that Haines et al. disclose a buckle 10 for coupling two elements together wherein the male connector has cantilever members 32 and 44, wherein the cantilever members are locked with the female connector, as shown in Figs. 9 and 10. The Office Action concludes that it would have been obvious to one having ordinary skill in the art to provide an alternative coupling means such as a buckle, as taught by Haines et al., for the purpose of securing the mask of Urso to the user's face.

It is respectfully noted that neither the cantilever projection 32 nor the cantilever arm 44 of Haines et al. depends from a leading end portion of the tongue 12. Both the cantilever projection 32 and the cantilever arm 44 of Haines et al. depend from the middle of the tongue 12, not from a leading end portion. Thus, even if combined, the references do not even include all of the features of claim 39.

The Office Action on page 3, lines 9-13, acknowledges that the combination of Urso and Haines et al. fails to disclose or suggest that the first connector portion is a female connector secured to the mask frame and the second portion is a corresponding male connector being connected to an attachment strap, but concludes “it would have been obvious to one having ordinary skill in the art at the time the invention was made to arrange the male and female connectors, since it has been held that rearranging parts of an invention involves only routine skill in the art.” The Office Action cites In re Japikse, 181 F.2d 1019, 86 USPQ 70, (CCPA 1950).

Haines et al. disclose a buckle assembly 10 including a tongue 12 and a tongue coupling member 30. The tongue 12 includes a first tongue 12a and a second tongue 12b each of which has a cantilever projection 32 that is receivable within a depression 34 of the other tongue. Each tongue 12 also includes a securement member 42 that includes a cantilever arm 44. See column 5, lines 18-49, of Haines et al.

There are no interrelated teachings in Urso and Haines et al. which would provide one of ordinary skill in the art with an apparent reason to combine the references. Urso discloses that an object of his invention is to provide a quick-donning head harness assembly having a cap which may be slid over the wearer’s head without becoming

entangled in the hair and being made of a low friction material. Urso further discloses that an object of his invention is to provide a harness assembly including upper and lower adjustable straps designed so that the pressure of the face seal of the associated face mask can be properly adjusted to minimize penetration of gases between the face seal and the wearer's face. See column 2, lines 3-15, of Urso.

Haines et al. disclose that their invention relates to buckle assemblies for releasably securing an individual, such as an infant, to a device such as a car seat, stroller or the like. See column 1, lines 5-9, of Haines et al. Haines et al. further disclose that an object of their invention is to provide the buckle assembly with at least two tongues receivable within a socket so that a caregiver may assemble the tongues individually or simultaneously at the option of the caregiver. Haines et al. further disclose that an object of their invention is to provide the buckle assembly with an ejection mechanism which is designed to reduce the opportunity that the tongues are inadvertently actuated. See column 2, lines 44-53, of Haines et al.

One of ordinary skill in the art would not have provided the buckle assembly of Haines et al. to the quick-donning head harness assembly of Urso. There is nothing in the disclosure of either Urso or Haines et al. that would have provided one of ordinary skill in the art with a reason to provide the head harness assembly of Urso with "an alternative coupling means such as a buckle" as alleged by the examiner. In fact, as discussed above, Urso disclose that both the constant length securing means 26 and the buckle assembly 40 of the head harness assembly are non-releasably secured to the face mask assembly 12 by the studs 20, 22 and the C-washers 34, 42. Furthermore, Urso discloses

that the adjustable buckle 46 connected to the strap portion 44 allows the neck strap 39 to be adjusted by releasing the adjustable buckles 46, for example to loosen the neck strap 39 for ease of removal of the head harness assembly. See column 3, lines 49-61, of Urso. However, Urso discloses that the buckle 46 is an adjustable buckle of conventional design. See column 3, lines 53-55. One of ordinary skill in the art would have no reason to replace the adjustable buckle 46 of Urso with a buckle assembly including male and female connectors such as disclosed by Haines et al.

With respect to the examiner's reliance on the rationale used by the court in the case of In re Japikse, it is respectfully submitted that the facts of the instant application are not sufficiently similar to the facts of that prior case to allow the examiner to rely on the court's rationale in determining the issue of obviousness. As discussed in the previous replies, including the previous Appeal Brief, the case of In re Japikse involved claims to a hydraulic power press which read on the prior art except with regard to the position of the starting switch. The claims were held unpatentable because shifting the position of the starting switch would not have modified the operation of the device. See, for example, MPEP §2144.04 VI.C.

In the instant case, it is respectfully submitted that providing the head harness assembly of Urso with a buckle including a female connector portion on the face mask assembly 12 and a male connector portion on either the fabric neck strap 39 and/or the elasticized fabric strap 48, would modify the operation of the quick-donning head harness assembly of Urso.

As discussed above, Urso discloses that the object of his invention is to provide a quick-donning head harness assembly which allows the cap to be slid over the wearer's head without becoming entangled in the hair and to provide upper and lower adjustable straps that can be properly adjusted to minimize penetration of gases between the face seal and the wearer's face. See column 2, lines 3-15, of Urso. See also, for example, column 1, lines 42-45. Urso further discloses that one problem which his invention is intended to solve is that wearers fail to properly don the equipment or properly adjust the equipment once donned because it is believed that the wearers fail to either properly don or properly adjust the existing head harness assemblies for fear that the harness may become entangled in the hair during donning or adjustment. See column 1, lines 50-56.

One of ordinary skill in the art would not have provided the head harness assembly of Urso with a buckle such as the one disclosed by Haines et al., including providing a female connector portion on the face mask assembly 12 and a male connector portion on either strap 39 or 48, because such a modification would alter the operation of the head harness assembly of Urso. Firstly, such a modification would require the wearer to connect the male and female connector portions of the buckle assembly prior to donning the head harness assembly, which would make donning of the head harness assembly less quick, not more quick. Secondly, placing a buckle having male and female connector portions on the head harness assembly of Urso would increase the likelihood of entangling the wearer's hair in the head harness assembly during connection of the male and female connectors. Thirdly, even though the buckle of Haines et al. is configured to reduce the possibility of inadvertent actuation, one of ordinary skill in the art would not

provide a releasable buckle to the head harness assembly of Urso, even if a reduced possibility, because inadvertent release of the buckle would release the face seal 16 from engagement with the wearer's face and allow penetration of gases between the face seal and the wearer.

**2. Claim 99 Is Not Obvious**

Claim 99 recites a respiratory mask and headgear combination comprising a respiratory mask having a rigid mask frame, and adjustable headgear for securing the mask on a patient. The headgear includes at least one attachment strap adapted to extend in a predetermined direction when coupled with the frame. The mask frame has secured thereto a substantially rigid first connector. A second connector is adapted for releasable mating with the first connector, and the second connector is connected to the attachment strap of the headgear. The first and second connectors form a press-release connection. The first connector is a female connector having a receiving slot and is secured to and extends laterally away from the mask frame such that the slot remains generally aligned with the predetermined direction of the strap. The second connector is a corresponding male connector and includes a resiliently biased cantilever member depending from a leading end portion of the male connector and being lockable with the female connector upon insertion of the leading end portion into the receiving slot of the female connector.

As discussed above with respect to independent claim 39, it is respectfully submitted that Urso and Haines et al. do not include any interrelated teachings that would provide one or ordinary skill in the art with an apparent reason for combining the references.

As also discussed above with respect to independent claim 39, the combination of Urso and Haines et al. would not include all of the features recited in claim 99. For example, Haines et al. do not disclose or suggest a resiliently biased cantilever member depending from a leading end portion of a male connector and even assuming it would have been obvious to combine the references, which Appellants do not concede, the combination would not result in the invention of claim 99.

Furthermore, the examiner fails to identify where either Urso or Haines et al. disclose certain features recited in claim 99, as required by 37 C.F.R. §1.104(c)(2). For example, claim 99 recites that the female connector has a receiving slot that is secured to and extends laterally away from the mask frame such that the slot remains generally aligned with a predetermined direction of the strap, which predetermined direction occurs when the attachment strap is coupled with the frame.

As there is no apparent reason why one of ordinary skill in the art would combine the references, and as the references, even if combined, would not include all of the features recited in claim 99, the rejection fails to establish a *prima facie* case of obviousness.

### **3. Claims 85, 86, 100 and 102 Are 99 Are Not Obvious**

Claims 85 and 102 each recite that the female connector is secured to the front wall portion of the mask frame.

With respect to claim 85, the Office Action on page 4, lines 11-16, alleges that Urso discloses a female connector, yet does not expressly disclose the orientation of the

female connector on the front wall portion. The Office Action concludes that it would have been obvious to one having ordinary skill in the art to arrange the male and female connectors, since it has been held that rearranging parts of an invention involves only routine skill in the art. The Office Action again cites In re Japikse.

Urso does not disclose a female connector, as alleged in the Office Action. Furthermore, one of ordinary skill in the art would not have provided the assembly of Urso with a buckle having male and female connector portions, as alleged in the Office Action. One of ordinary skill in the art also would not have provided a connector on a front wall of the rigid lens 14 of the face mask assembly 12 of Urso. As clearly shown, for example, in Fig. 1 of Urso, the constant length securing means 26 and the strap portion 44 are secured to sides of the rigid lens 14. One of ordinary skill in the art would not have rearranged the constant length securing means 26 and the strap portion 44 to beyond a front wall of the rigid lens as such an arrangement would interfere with the vision of the wearer of the head harness assembly. Accordingly, the examiner's reliance on the rationale used by the court in the case of In re Japikse is insufficient to establish a *prima facie* case of obviousness against claim 85.

Claims 86 and 100 each recite that the female connector is secured to the mask frame to permit the male connector to be connected to and disconnected from the female connector portion in a single-handed operation.

With respect to claims 86 and 100, the Office Action on pages 3-4 alleges that Fig. 1 of Urso discloses that the lower mounting stud 22 may be connected and disconnected from the C-washer 42 in a single hand operation.

It is respectfully noted that there is no disclosure or suggestion by Urso that the lower mounting stud 22 may be connected to and disconnected from the C-washer 42, as alleged in the Office Action. It is also respectfully submitted that there is no disclosure or suggestion by Fig. 1 of Urso that even if such a connection and disconnection were possible, which Appellants do not concede, that it could be performed in a single hand operation. As discussed above, Urso discloses that the buckle assembly 40 is secured to the lower stud 22 by the C-washer 42. There is no disclosure or suggestion that this connection can be disconnected as alleged in the Office Action.

**B. Claims 33-35 and 87-96 Are Not Obvious Over Urso in View of Kasai**

**1. Claims 33 and 87 Are Not Obvious**

Claims 33 and 87 each recite, *inter alia*, a headgear including at least one strap portion having an end; a male connector portion attached to the end of the at least one strap portion, the male connector portion including a trailing portion that has a pair of spaced side portions and a cross bar extending transversely therebetween, the male connector portion also including a leading portion that has a pair of longitudinally extending side beams spaced slightly inwardly from the side portions, the leading portion including a cross piece extending between the side beams and defining a leading edge of the male connector portion, the leading portion of the male connector portion also including a cantilevered member extending from an intermediate portion of the cross piece toward the trailing portion of the male connector portion, the cantilevered member being movable between deflected and undeflected positions and being resiliently biased

toward the undeflected position, the cantilevered member including a locking element extending outwardly therefrom, the locking element being positioned on the cantilevered member generally spaced from the cross piece, the leading portion of the male connector portion including a ridge structure adjacent the trailing portion and extending generally perpendicularly relative to the side beams; a mask frame; and a female connector portion secured to the mask frame and being configured to receive the male connector portion therein.

Appellants respectfully submit that one of ordinary skill in the art would have no apparent reason to combine the buckle assembly of Kasai with the head harness assembly of Urso for generally the same reasons discussed above with respect to the combination of Urso and Haines et al. One of ordinary skill in the art would not have provided a buckle assembly including male and female connectors to the head harness assembly of Urso as such a modification would make the head harness assembly more time consuming to don and adjust, and would increase the likelihood of the adjustment straps being entangled in the wearer's hair.

It is also respectfully submitted that even assuming it would have been obvious to combine Urso and Kasai, which Appellants do not concede, the combination would not result in either the invention of claim 33 or claim 87.

The Office Action alleges on pages 5-6 that Kasai discloses a male connector in Fig. 6 having a trailing portion (corresponding to the stem portion 26) and a pair of side portions (corresponding to the lateral protuberances 36, 37) with a crossbar (corresponding to the transverse crossbar 28) and a leading portion (corresponding to the

thin plate portion 27) including a cantilever (corresponding to the cantilevered resilient tongue 30) with a crosspiece (corresponding to the U-shaped rim 31) and a locking element (corresponding to the locking lug 32) extending from the cantilever.

It is respectfully noted that the Office Action does not identify any portion of Kasai corresponding to the ridge structure adjacent the trailing portion that extends generally perpendicularly relative to the side beams, as required by 37 C.F.R. §1.104(c)(2).

It is also respectfully submitted that the cantilevered resilient tongue 30 of Kasai does not correspond to the cantilevered member of claims 33 and 87. As recited in claims 33 and 87, the leading portion of the male connector includes a crosspiece extending between the side beams and defines a leading edge of the male connector portion. The leading portion of the male connector portion includes the cantilevered member extending from an intermediate portion of the crosspiece toward the trailing portion of the male connector portion.

In contrast, Kasai disclose that the cantilevered resilient tongue 30 extends from the stem portion 26. In other words, the cantilevered resilient tongue 30 does not extend from an intermediate portion of the front end 33 of the U-shaped rim 31, and thus does not correspond to the cantilevered member of claims 33 and 87. Therefore, even assuming it would have been obvious to combine the references, which Appellants do not concede, the combination would not include, at least, the feature of a cantilevered member extending from a crosspiece defining a leading edge of a male connector, or a

ridge structure adjacent the trailing portion of the male connector portion that extends generally perpendicularly relative to the side beams.

Claim 87 recites a headgear for a respiratory mask assembly comprising a male connector portion having the features discussed above with respect to claim 33. As the combination of Urso and Kasai fails to include all of the features of the male connector portion of claim 87, the combination fails to present a *prima facie* case of obviousness.

**2. Claims 88 and 91-93 Are Not Obvious**

With respect to claim 88, the Office Action on page 6, lines 13-14, alleges that the space between the transverse crossbar 28 and the stem portion 26 of Kasai corresponds to the at least one groove. It is respectfully noted, however, that this space is not on a side portion of the plug member.

With respect to claim 91, the Office Action on page 7, lines 1-2, alleges that the canted rear surface 34 of the locking lug 32 corresponds to the ridge. Appellants respectfully disagree.

As recited in base claim 87, the ridge structure is adjacent the trailing portion of the male connector portion and extends generally perpendicularly relative to the side beams. The rear surface 34 of the locking lug 32 of Kasai does not include any of these features.

With respect to claims 92 and 93, the Office Action on page 7, lines 3-4, alleges that the rear surface 34 of the locking lug 32 of Kasai also corresponds to the arcuate ridge recited in claims 92 and 93. Appellants respectfully disagree. Firstly, it is respectfully noted that claim 92 recites the arcuate ridge is between the ridge structure

and the locking element. Accordingly, the rear surface 34 of Kasai cannot correspond to both the arcuate ridge and the ridge structure. Secondly, the rear surface 34 is not arcuate nor is it provided between a ridge structure and the locking lug 32. With respect to the examiner's reliance on the rationale used by the court in the case of In re Dailey et al., 357 F.2d 669, 149 USPQ 47 (CCPA 1966), as noted in the previous replies, the facts of that case are not sufficiently similar to the instant application to permit the examiner to rely on the court's rationale to determine obviousness.

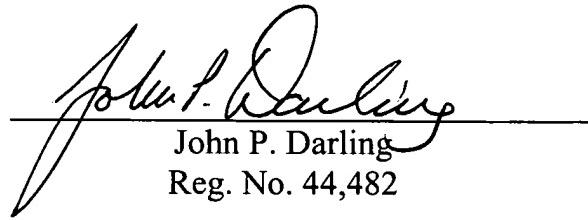
**CONCLUSION**

In conclusion it is believed that the application is in clear condition for allowance; therefore, early reversal of the Final Rejection and passage of the subject application to issue are earnestly solicited.

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

By:



John P. Darling  
Reg. No. 44,482

JPD:tlm  
901 North Glebe Road, 11th Floor  
Arlington, VA 22203-1808  
Telephone: (703) 816-4000  
Facsimile: (703) 816-4100

(VIII)      CLAIMS APPENDIX

33. A respiratory mask assembly comprising:

a headgear structure including at least one strap portion having an end;

a male connector portion attached to the end of the at least one strap portion, the male connector portion including a trailing portion that has a pair of spaced side portions and a cross bar extending transversely therebetween, the male connector portion also including a leading portion that has a pair of longitudinally extending side beams spaced slightly inwardly from the side portions, the leading portion including a cross piece extending between the side beams and defining a leading edge of the male connector portion, the leading portion of the male connector portion also including a cantilevered member extending from an intermediate portion of the cross piece toward the trailing portion of the male connector portion, the cantilevered member being movable between deflected and undeflected positions and being resiliently biased toward the undeflected position, the cantilevered member including a locking element extending outwardly therefrom, the locking element being positioned on the cantilevered member generally spaced from the cross piece, the leading portion of the male connector portion including a ridge structure adjacent the trailing portion and extending generally perpendicularly relative to the side beams;

a mask frame; and

a female connector portion secured to the mask frame and being configured to receive the male connector portion therein.

34. The respiratory mask assembly of claim 33, wherein the mask frame includes a front wall portion defining a forward end of the mask frame, the front wall portion having a circular gas inlet aperture configured to connect to a gas delivery conduit, the mask frame including a pair of inclined side wall portions and a base portion, each side wall portion and the base portion having a portion thereof connected to the front wall portion.

35. The respiratory mask assembly of claim 34, wherein the mask frame includes a rim at rear edges of the inclined side wall portions and the base portion, the rim defining a rearward end of the mask frame and being configured to allow a cushion to be attached thereto.

39. A respiratory mask and headgear combination comprising a respiratory mask having a rigid mask frame, and a headgear for securing said mask on a patient, said headgear including at least one attachment strap, said mask frame having secured thereto a rigid first connector portion, further comprising a second connector portion adapted for releasable mating with said first connector portion, said second connector being connected to said attachment strap, wherein

said first and second connector portions form a press-release connection between said mask frame and said strap;

said first connector portion is a female connector secured to said mask frame; and  
said second connector portion is a corresponding male connector, and  
said male connector includes a resiliently biased cantilever member depending

from a leading end portion of said male connector and being lockable with said female connector.

71. A respiratory mask assembly according to claim 33, wherein each side portion of the trailing portion comprises at least one groove.

72. A respiratory mask assembly according to claim 33, wherein the locking element comprises two lugs on opposite sides of the cantilevered member.

73. A respiratory mask assembly according to claim 72, wherein each lug has a wedge profile.

74. A respiratory mask assembly according to claim 33, wherein the ridge structure is formed on the cantilevered member.

75. A respiratory mask assembly according to claim 33, further comprising an arcuate ridge between the ridge structure and the locking element.

76. A respiratory mask assembly according to claim 33, wherein the pair of spaced side portions and the cross bar define an aperture configured to receive the end of the at least one strap portion.

77. A respiratory mask assembly according to claim 33, wherein the mask frame comprises an extension configured for attachment of a forehead support.

78. A respiratory mask assembly according to claim 34, wherein the female connector portion is secured to the front wall portion of the mask frame.

79. A respiratory mask assembly according to claim 33, wherein the female connector portion is secured to the mask frame to permit the male connector portion to be connected to and disconnected from the female connector portion in a single-hand operation.

80. A respiratory mask assembly according to claim 39, wherein the mask frame includes a front wall portion defining a forward end of the mask frame, the front wall portion having a circular gas inlet aperture configured to connect to a gas delivery conduit, the mask frame including a pair of inclined side wall portions and a base portion, each side wall portion and the base portion having a portion thereof connected to the front wall portion.

81. A respiratory mask assembly according to claim 80, wherein the mask frame includes a rim at rear edges of the inclined side wall portions and the base portion, the rim defining a rearward end of the mask frame and being configured to allow a cushion to be attached thereto.

82. A respiratory mask assembly according to claim 39, wherein the cantilever member comprises a lug configured to engage a socket in the female connector.
83. A respiratory mask assembly according to claim 82, wherein the lug has a wedge profile.
84. A respiratory mask assembly according to claim 39, wherein the mask frame comprises an extension configured for attachment of a forehead support.
85. A respiratory mask assembly according to claim 80, wherein the female connector is secured to the front wall portion of the mask frame.
86. A respiratory mask assembly according to claim 39, wherein the female connector is secured to the mask frame to permit the male connector to be connected to and disconnected from the female connector portion in a single-hand operation.
87. A headgear for a respiratory mask assembly, the headgear comprising:
  - at least one strap portion having an end;
  - a male connector portion attached to the end of the at least one strap portion, the male connector portion including a trailing portion that has a pair of spaced side portions and a cross bar extending transversely therebetween, the male connector portion also including a leading portion that has a pair of longitudinally extending side beams spaced

slightly inwardly from the side portions, the leading portion including a cross piece extending between the side beams and defining a leading edge of the male connector portion, the leading portion of the male connector portion also including a cantilevered member extending from an intermediate portion of the cross piece toward the trailing portion of the male connector portion, the cantilevered member being movable between deflected and undeflected positions and being resiliently biased toward the undeflected position, the cantilevered member including a locking element extending outwardly therefrom, the locking element being positioned on the cantilevered member generally spaced from the cross piece, the leading portion of the male connector portion including a ridge structure adjacent the trailing portion and extending generally perpendicularly relative to the side beams.

88. A headgear according to claim 87, wherein each side portion of the trailing portion comprises at least one groove.

89. A headgear according to claim 87, wherein the locking element comprises two lugs on opposite sides of the cantilevered member.

90. A headgear according to claim 89, wherein each lug has a rounded wedge profile.

91. A headgear according to claim 87, wherein the ridge structure is formed on the cantilevered member.

92. A headgear according to claim 87, further comprising an arcuate ridge between the ridge structure and the locking element.

93. A headgear according to claim 92, wherein a height of the arcuate ridge is less than a height of the ridge portion and more than a height of the locking element.

94. A headgear according to claim 87, wherein the pair of spaced side portions and the cross bar define an aperture configured to receive the end of the at least one strap portion, the aperture having a first width adjacent the cross bar and a second width adjacent the cantilevered member, the first width being greater than the second width.

95. A headgear according to claim 87, wherein a distance between a leading side of the cross bar and a trailing edge of the cantilever member is at least 5 mm.

96. A headgear according to claim 87, wherein the ridge structure has a width of approximately 14 mm and a length of approximately 5 mm.

99. A respiratory mask and headgear combination comprising a respiratory mask having a rigid mask frame, adjustable headgear for securing said mask on a patient, said headgear including at least one attachment strap adapted to extend in a predetermined direction when coupled with the frame, said mask frame having secured thereto a

substantially rigid first connector, further comprising a second connector adapted for releasable mating with said first connector, said second connector being connected to said attachment strap of the headgear, wherein

    said first and second connectors form a press-release connection;

    said first connector is a female connector having a receiving slot, said female connector being secured to and extending laterally away from said mask frame such that the slot remains generally aligned with the predetermined direction of the strap;

    said second connector is a corresponding male connector; and

    said male connector includes a resiliently biased cantilever member depending from a leading end portion of said male connector and being lockable with said female connector upon insertion of said leading end portion into the receiving slot of the female connector.

100. A respiratory mask assembly according to claim 99, wherein the female connector is secured to the mask frame to permit the male connector portion to be connected to and disconnected from the female connector portion in a single-hand operation.

101. A respiratory mask assembly according to claim 99, wherein the mask frame includes a front wall portion defining a forward end of the mask frame, the front wall portion having a circular gas inlet aperture configured to connect to a gas delivery conduit, the mask frame including a pair of inclined side wall portions and a base portion, each side wall portion and the base portion having a portion thereof connected to the

front wall portion.

102. A respiratory mask assembly according to claim 101, wherein the female connector is secured to the front wall portion of the mask frame.

103. A respiratory mask assembly according to claim 101, wherein the mask frame includes a rim at rear edges of the inclined side wall portions and the base portion, the rim defining a rearward end of the mask frame and being configured to allow a cushion to be attached thereto.

104. A respiratory mask assembly according to claim 99, wherein the mask frame comprises an extension configured for attachment of a forehead support.

105. A respiratory mask assembly according to claim 99, wherein the cantilever member comprises a lug configured to engage a socket in the female connector.

106. A respiratory mask assembly according to claim 105, wherein the lug has a wedge profile.

**(IX) EVIDENCE APPENDIX**

None.

**(X) RELATED PROCEEDINGS APPENDIX**

None.